

NOVEMBER/DECEMBER 2025

**23UEL52 — ELECTRICAL AND  
ELECTRONIC INSTRUMENTATION**

Time : Three hours

Maximum : 75 marks

**SECTION A — (10 × 2 = 20 marks)**

Answer ALL questions.

1. Define sensitivity of a PMMC galvanometer.
2. State the function of a multimeter.
3. Write the balancing condition of a Wheatstone's bridge.
4. List the application of Kelvin's bridge.
5. Define deflection sensitivity of an oscilloscope.
6. State the function of CRT screen in CRO.
7. What is instrumentation amplifier?
8. What is function generator?
9. Define transducer with example.
10. Give the use of a seven segment display.



SECTION B — ( $5 \times 5 = 25$  marks)

Answer ALL questions.

11. (a) Explain the conversion of a galvanometer into an ammeter.

Or

- (b) Describe the working principle and construction of a PMMC galvanometer with neat diagram.

12. (a) Explain the balancing condition for Maxwell's bridge.

Or

- (b) Derive the expression for frequency determination using Wien's bridge.

13. (a) Discuss electrostatic deflection in CRO.

Or

- (b) Explain how frequency and time interval can be measured using CRO.

14. (a) Write a short note on electronic voltmeter.

Or

- (b) Explain the construction and working of a function generator.

15. (a) Draw the circuit diagram and explain the working of unbounded strain gauge.

Or

- (b) Differentiate between LCD and LED displays.

SECTION C — ( $3 \times 10 = 30$  marks)

Answer any THREE questions.

16. Describe the principle and working of multimeter.

17. Discuss the construction, working and application of Wheatstone's bridge with diagram.

18. Draw and explain the block diagram of CRO.

19. Explain construction and working of function generator.

20. Discuss the working, principle and application of LVDT with neat diagram.

